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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/052,104

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Shih-Tsung Yang

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9853

7590

05/18/2004

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EXAMINER

SHINGLETON, MICHAEL B

ART UNIT

PAPER NUMBER

2817

DATE MAILED: 05/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/052,104	Applicant(s) YANG ET AL.	
	Examiner Michael B. Shingleton	Art Unit 2817	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE three MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 2/5/04.
- 2a) ☒ This action is **FINAL**.      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 31-37 is/are allowed.
- 6) ☒ Claim(s) 1, 3, 4, 6, 16, 18, 19, 21 is/are rejected.
- 7) ☒ Claim(s) 2, 5, 7-15, 17, 20, 20-30 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being clearly anticipated by Zuta 5,182,528 (Zuta).

Zuta discloses a method having the steps of dividing a frequency range into a plurality of bands of interest (R1-R4, See Figure 3), measuring via element 40 a frequency of a voltage controlled oscillator (VCO) for a plurality of capacitance value/voltage level combinations to obtain a set of capacitance values and a corresponding set of frequency values for a set of voltage levels as is clearly illustrated in Figures 1, 2, and 3, selecting a capacitance value via item 64 such that a corresponding frequency range covers the frequency band of interest (Note the sloped voltage vs frequency curves for each frequency band of interest as shown in Figure 3.), the corresponding frequency range determined by an output voltage AV of a digital to analog converter 66 (See column 4, lines 41-47), and repeating operation of selecting a capacitance value via item 64 for each frequency band of interest.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3, 4, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zuta 5,182,528 (Zuta).

The same reasoning as applied in the above 35 USC 102 rejection of claims and the following:

Zuta is silent on the exact operating frequency range of the device. The selection of the operating range or optimum range involves but routine skill in the art.

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to operate the VCO of Zuta in the 2200 MHz to 2600 MHz range because this is the selection of the optimum or workable range that involves but routine skill in the art.

Zuta shows four frequency bands of interest in Figure 3 thereof. Claims recite six and 16 bands of interest. The selection of the number of bands is merely the selection of the optimum or workable range that involves but routine skill in the art at the time the invention was made and accordingly is the mere selection of how "wide" to make the frequency range of interest. In other words in applications where a smaller bandwidth can be used then the frequency range of interest does not have to be a large and there can be more frequency bands.

Likewise it would have been obvious to one of ordinary skill in the art at the time the invention was made to select the number of bands to be six or 16 since this merely selects the optimum or workable range for the bandwidth of the individual "frequency range of interest" and accordingly, this selection of the optimum or workable range, i.e. making the most use of the total frequency range for a particular application, involves but routine skill in the art.

Claims 16, 18, 19, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zuta 5,182,528 (Zuta) in view of Feulner et al. 6,366,393 (Feulner).

The same reasoning as applied in the above 35 USC 102 rejection of claims and the following:

Zuta is silent on implementing the device as a machine-readable medium containing instructions which, when executed by a processor, cause the processor to perform a method, in which the method is defined by the actions of the actual device.

It is long held that implementing the device as a machine readable medium having all the method steps as defined by the device is an art recognized equivalent structure to the actual device itself (See the top of column 13 of Feulner).

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the device of Zuta as a machine readable medium containing instructions which, when executed by a processor, cause the processor to perform a method defined by the actual device because,

such an implementation is an art recognized equivalent implementation of the actual device and method associated with the actual device as taught by Feulner.

Zuta is silent on the exact operating frequency range of the device. The selection of the operating range or optimum range involves but routine skill in the art.

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to operate the VCO of Zuta in the 2200 MHz to 2600 MHz range because this is the selection of the optimum or workable range that involves but routine skill in the art.

Zuta shows four frequency bands of interest in Figure 3 thereof. Claims recite six and 16 bands of interest. The selection of the number of bands is merely the selection of the optimum or workable range that involves but routine skill in the art at the time the invention was made and accordingly is the mere selection of how "wide" to make the frequency range of interest. In other words in applications where a smaller bandwidth can be used then the frequency range of interest does not have to be a large and there can be more frequency bands.

Likewise it would have been obvious to one of ordinary skill in the art at the time the invention was made to select the number of bands to be six or 16 since this merely selects the optimum or workable range for the bandwidth of the individual "frequency range of interest" and accordingly, this selection of the optimum or workable range, i.e. making the most use of the total frequency range for a particular application, involves but routine skill in the art.

Claims 2, 5, 7-15, 17, 20, 22-30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 31-37 are allowed.

Applicant's arguments filed 2-5-2004 have been fully considered but they are not persuasive.

Applicant believes that "Zuta has nothing to do with the method performed in Claim 1" and that "the coarse tuning, fine tuning, nor the feedback operations of Zuta. teach, suggest, or disclose "b) measuring a frequency of a voltage-controlled oscillator (VCO) for a plurality of capacitance value/voltage level combinations to obtain a set of capacitance values and a corresponding set of frequency values for a set of voltage level" or "c) selecting a capacitance value such that a corresponding frequency range covers the frequency band of interest...". The examiner respectfully

disagrees. As recited in the previous office action the frequency of the VCO is measured via element 40. This measurement is obtained for a plurality of capacitance value/voltage level combinations to obtain a set of capacitance values and a corresponding set of frequency values for a set of voltage levels. This is clearly illustrated in Figures 1-3. This is not obtained for just a single capacitance value/voltage level to obtain one capacitance value. Column 3, around line 43 of Zuta also clearly points to the fact of measuring over a plurality of capacitance value/voltage level combinations to obtain a set of capacitance and frequency values for a set of voltage levels. Note that a table of the oscillator's characteristics is obtained. This table is also updated to account for changing conditions. The required control signals include the voltage level AV and the capacitance values. From the measurement of the frequency the corrected table is obtained. It would make no sense to measure just one frequency for one capacitance value/voltage combination to obtain one capacitance value and frequency value for one voltage level for this would not make a table. A table is a plurality of values. This also would not be measuring the "oscillator's characteristics" as required by Zuta, but would just measure one characteristic. In particular note Figure 4 of Zuta that shows the oscillator's characteristics for a plurality of capacitance value/voltage level combinations so as to obtain the set of capacitance values and the corresponding set of frequency values for a set of voltage levels. This graph of Zuta shows the relationship of voltage to frequency for a particular capacitance which as noted above was obtained by measuring the frequency of the VCO for a plurality of capacitance value/voltage level combinations as indicated above.

It is clear from Zuta that a capacitance value is selected via item 64 such that a corresponding frequency range covers a frequency band of interest. Thus the examiner does not see support for applicant's belief. Note that the control signal 64 causes a change in the capacitance value (See Figure 2 of Zuta.). This operation is clearly repeated otherwise one could not obtain the table for each band of interest as required in Zuta. Accordingly, the examiner respectfully disagrees with applicant.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael B. Shingleton whose telephone number is (571)272-1770. The examiner can normally be reached on Mon-Thurs from 8:30 to 4:30. The examiner can also be reached on alternate Fridays. The examiner normally has first Fridays of the bi-week off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal, can be reached on (571)272-1769. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

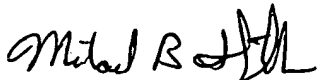
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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MBS

Oct 27, 2003

May 12, 2004

  
MICHAEL B. SINGLETON  
PRIMARY EXAMINER  
GROUP ART UNIT 2817